

FREO2 Foundation

Q3 2021/22

Impact Report



EVERY BREATH IS

A CHANCE AT LIFE



About FREO2 Foundation

FREO2 Foundation (FREO2) is a global not-for-profit organisation that aims to reduce the number of deaths of babies and children suffering from pneumonia in low-and-middle-income countries.

We envision a world where every child can breathe, live and thrive. Our mission is to improve access to oxygen to save lives and reduce inequalities in health.

The FREO2 team is committed to saving lives by developing and deploying our novel medical oxygen technologies to improve access to oxygen and patient care at the under-resourced periphery of health services. FREO2 oxygen innovations are affordable, developed specifically to be installed in the most remote parts of the world and can provide a constant supply of oxygen, even during a power outage.

How we work

The key differentiator of our approach is our focus on oxygen as the delivery of a service, not just the provision of technology.

Product

We develop fit-for-purpose oxygen systems and innovations to increase oxygen access at the under-resourced periphery of health services. Our Oxylink concentrator provides a continuous flow of oxygen to children, even during a power outage.

Clinical Training

We train local healthcare workers in pulse oximetry and medical oxygen delivery to improve clinical outcomes.

Installation and Maintenance

We install FREO2 oxygen systems in remote health facilities and up-skill local car mechanics, plumbers and electricians to install and maintain FREO2 technology.

Social Enterprise

Our affordable "fee for service" model nurtures locally run enterprises and unlocks revenue. All funds earned are reinvested back into employment, education and supporting under resourced health facilities.





A note from our Chief Executive Officer



Dear Supporter,

On behalf of the board and our entire global team, we thank you for supporting FREO2 Foundation this quarter. Your support is the driving force behind our far-reaching programs and our tireless pursuit of health equity. Thanks to your generosity and collaboration, FREO2 can deliver medical oxygen for babies and children, where it is most needed.

To date, we have treated 2,924 children with FREO2 enabled oxygen. This impact would not have been possible without the incredible efforts of our on the ground teams who have worked tirelessly this quarter to install FREO2 systems across 15 new facilities - this is an amazing achievement.

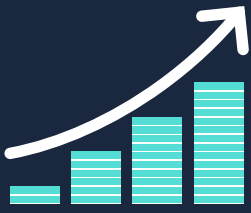
We would also like to thank our remarkable local clinical teams who have now trained 624 healthcare workers in remote areas on pulse oximetry diagnosis and safe delivery of medical oxygen to babies. Thanks to their hard work, we have now beaten our target for healthcare workers trained globally!

We are also thrilled to announce that this quarter we completed before the deadline and under budget, FREO2's most ambitious project ever: the Tanzania 'Oxygen as a Service' pilot, sponsored by UNICEF and the FCDO.

I would like to express my deepest gratitude to our teams, partners and donors who have been instrumental in achieving these wonderful milestones. At the end of the day, it is your support that makes our work possible.

With gratitude,

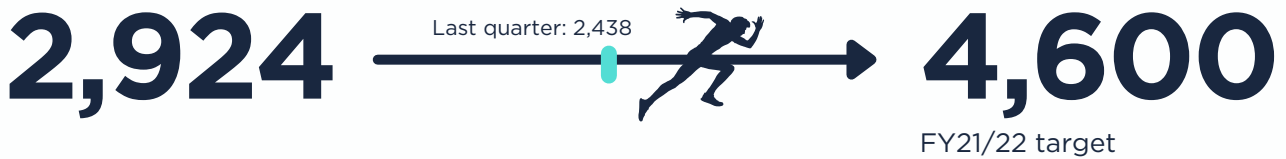
Roger Rassool,
CEO of FREO2 Foundation.



Milestones achieved to date

Children treated with FREO2 enabled oxygen

486 children treated this quarter



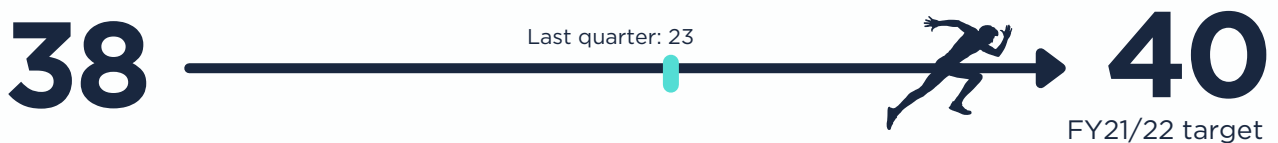
Health workers trained in pulse oximetry and oxygen therapy delivery

173 health workers trained this quarter



Remote health facilities with FREO2 systems installed

15 health facilities with FREO2 systems installed this quarter



Catchment population for FREO2 oxygen

1,088,500



Local FREO2 staff employed

16



Quarterly update

Successes

- The Tanzanian team delivered our 'Oxygen as a Service' pilot ahead of schedule and well within budget!
- This quarter, in collaboration with our partner Kröber, FREO2 has produced and shipped 86 Oxylink concentrators for installation in-country. This is the largest number of systems we have delivered in history! We are thrilled to have begun the scaling process and extend our gratitude to our teams on the ground for all their hard work in installation and maintenance.
- We secured strategic international support from a new global donor to accelerate the production of FREO2's new Oxylink-10 concentrator.
- Our innovation team has successfully completed the first phase of rapid development of the Oxypump portable system prototype, to provide oxygen to babies and children who have to travel long distances for hospital referrals.
- We launched a Gender Equity podcast series on our Take a Breath with FREO2 podcast, hosted by Australian broadcast journalist, Jennifer Hansen. We were thrilled to interview [Umra Omar](#), [Rebeca Gyumi](#) and [Mercy Kafotokoza](#) as part of our three-year Gender Equity Strategy. The strategy aims to improve health outcomes for women and girls in low-resource settings and make advances towards the UN goal of achieving gender equality and empowering all women.
- We collaborated with the Consortium of Universities for Global Health, the Every Breath Counts Coalition and the Global Alliance of Medical Excellence to facilitate a medical-student led advocacy campaign for increased investment in oxygen, you can watch the student's Oxygen Declaration [video here](#).

Key Learnings

- The second wave of COVID-19 has brought into focus the dire need for oxygen in the Solomon Islands. The pandemic has also impacted our baseline assessments in the Pacific, as there has been hesitancy from the population to visit hospitals during this time. To address this issue, our Country Manager Dr Divi Ogaoga has secured equivalent baseline data from 2021 (as well as 2022) which will help quantify the need for oxygen.
- FREO2 has experienced continued uncertainty with freight costs and supply chains due to the pandemic. Our new Manager of Operations, Doug Smith is well experienced in dealing with such issues and has been working tirelessly to secure more favourable terms with shipping companies.



'Telementoring': an unexpected happy consequence of our training program in Tanzania

Baby Agustino is a pseudonym to protect the identity of the child who was treated with FREQ2 enabled oxygen. Agustino is a popular Tanzanian baby boy's name and means "deserving of respect".

It was 4am in the middle of the rainy season when baby Agustino entered this world. Heavy rain pounded against the windows of Karatu Health Centre as the team worked to save this tiny baby in his first moments of life. After a long and agonising delivery, he was born with shoulder dystocia – it was obvious he was in excruciating discomfort but more concerningly, as he began to draw his very first breath, he was gasping for air. Clinician Yohana from Karatu Health Centre had recently completed the FREQ2 Clinical Training Program and recognised right away that Agustino was displaying signs of severe hypoxia. She prescribed a course of treatment and then reached out for advice through the recently formed FREQ2 'Telementoring' Channel. Immediately, Yohana was reassured that her treatment plan of hydrocortisone, adrenaline and FREQ2 enabled oxygen was the correct treatment pathway.

Oxygen shortages have long been a problem in remote regions of Arusha and Mbulu. This problem is exacerbated during the rainy season, as childhood pneumonia rates spike and overwhelm local health facilities, many of which do not have any access to medical oxygen. Health workers who don't have access to critical oxygen resources are often not trained in pneumonia diagnosis, resulting in countless hypoxic babies slipping under the radar for treatment. Tragically, Medical Officer Dr Peter Sule reports that health facilities in Arusha have lost many patients, simply due to a lack of sufficient oxygen supply.



Dr Crispin, Sr Panga and Dr Josephat led FREQ2's training program training 80 healthcare workers in Tanzania.

In February 2022, The FREO2 team visited Karatu to deliver our 'Oxygen as a Service' model, which integrates product, installation, education and social enterprise. Key to this model is our clinical training program, which aims to empower and educate local health workers in pulse oximetry diagnosis and safe delivery of medical oxygen to babies and children.

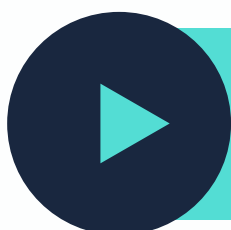
Dr Sr Panga (FREO2 Clinical Lead) believes that the program has revolutionised clinical care for hypoxia in these remote settings, where the fundamental objective is simply "to give oxygen to the child who needs oxygen". An unexpected yet delightful outcome of the training program has been the initiation of the 'telementoring' community that Yohana reached out to. The active community of 70 clinicians across Tanzania share knowledge and advice on treatment of hypoxic babies and children in real time.

When Dr Sr Panga read of Yohana's pleas for baby Agustino, she promptly advised the team at Karatu Healthcentre to regularly monitor the patient's oxygen levels and report back to the clinical team on his condition. By 10.59am the following morning, baby Agustino was finally breathing in the warm air without oxygen support. The telementoring team took a sigh of relief when a photo update from Yohana showed baby Agustino resting peacefully in his mothers' arms feeding on her milk. Reporting back to the telementoring community, Yohana exclaimed with gratitude, "God is great, we glorified his grace, now our baby is doing well".



Baby Agustino sleeps peacefully after receiving FREO2 enabled oxygen at Karatu Health Centre.

There are stories like Agustino's happening everyday across the Mbulu and Arusha regions since telementoring was initiated. The Tanzanian FREO2 clinical team would like to extend their gratitude to our partners and donors for providing critical investment in our clinical training programs to help strengthen health systems for sustainable impact. It is your support that is helping us to make our dream of a world where every child can live, breath and thrive, a reality.



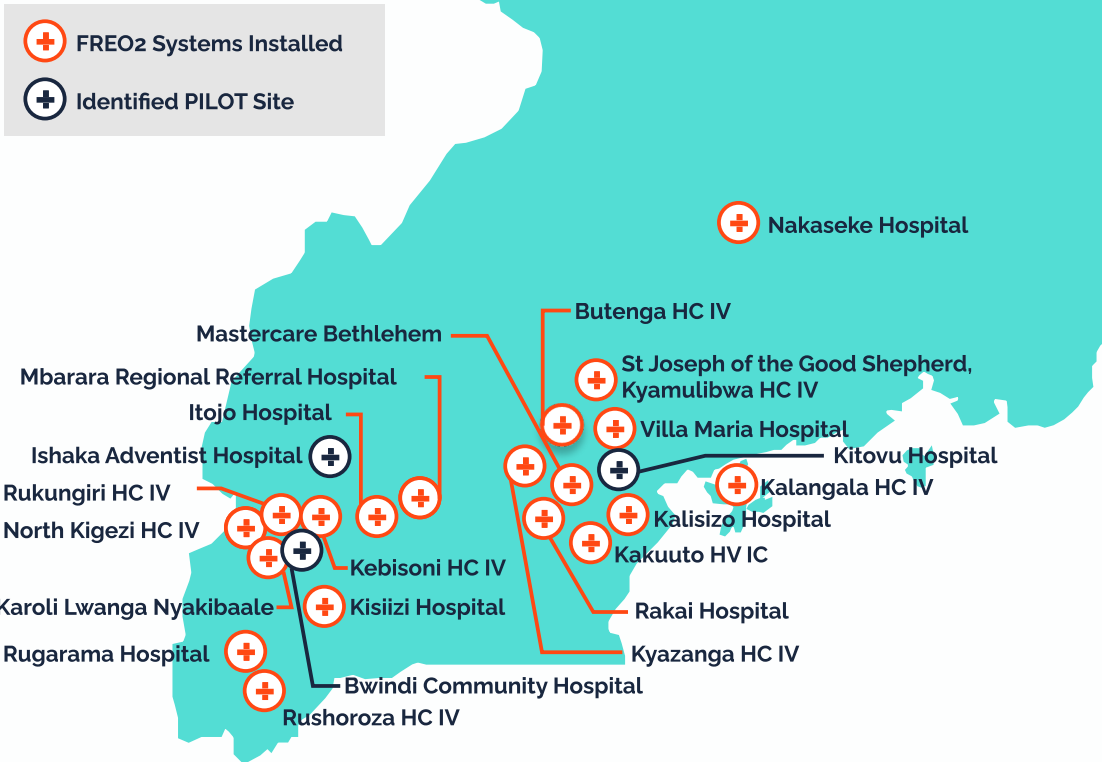
[Watch our Tanzania Clinical Training mini-documentary.](#)

News from Uganda



Our progress to date:

Children treated: 1,451	Health workers trained: 547
Health facilities where we work: 22	Local staff employed: 5



Country Update

This quarter, FREO2's Uganda team led three clinical training programs in the Greater Masaka region and South Western Uganda, training 222 health workers in pulse oximetry diagnosis and medical oxygen delivery. The team also installed seven FREO2 systems in remote health facilities. Our Ugandan Technician Frank also supported the installation of four more systems in Tanzania, providing knowledge and skills transfer. On the stakeholder engagement front, the team presented to the state Minister of Health, Hon Anifa Kawooya on FREO2's products and programs and organised a site visit with the Clinton Health Access Initiative at Butenga HC IV, to demonstrate the need for FREO2 systems at remote local health centres.



A note from our Country Manager Sheillah Bagayana

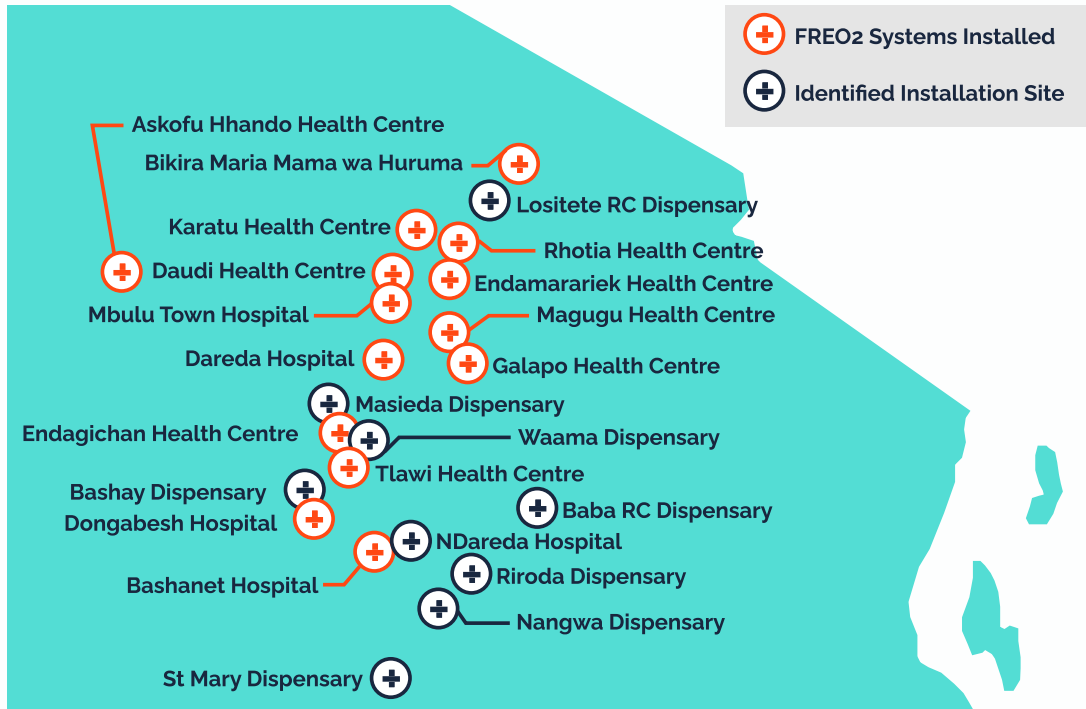
Warmest wishes and regards to all our friends and partners from FREO2 Uganda. Our priority has always been to deliver oxygen in the facilities where we work, to children who need it the most. We thank the support of our partners in Uganda like Babies and Mothers Alive (BAMA), Mbarara Regional Referral Hospital and Clinton Health Access Initiative. We are also very grateful for all our friends, donors and partners across the globe. We cannot forget that 'every breath, is a chance at life'.

News from Tanzania



Our progress to date:

Children treated: 1,473	Health workers trained: 77
Health facilities where we work: 14	Local staff employed: 11



Country Update

This quarter we have had tremendous success in Tanzania as we completed our 'Oxygen as a Service' program. After completing our clinical training programs, we installed 24 systems across 14 sites, which are now treating babies and children suffering with hypoxia. With new funding pledged to scale our work in Tanzania, we have initiated the hiring process of a Tanzania Project Manager to lead the upcoming program. We look forward to continuing our work and expanding our capacity on the ground.



A note from our Country Manager Br George Massay

I wish to express my sincere gratitude to our donors, partners and my colleagues in Tanzania for the great work that we were able to achieve this quarter. Without the support of our donors and partners, the local team would not have been able to implement the project as they did.

We are now witnessing in Tanzania, babies' lives being saved with FREO2 oxygen. One woman whose child would have died had it not been for the availability of oxygen in Dongobesh, called me yesterday to thank FREO2 for bringing this life saving treatment closer to her. We have a very dedicated team in Tanzania and we have established good partnerships between clinicians across our installed facilities.

“

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Br George Massay
FREQ2 Tanzania



News from the Pacific



Country Update

This quarter, despite ongoing political instabilities and COVID-19 challenges in the Solomon Islands, FREO2 has initiated our baseline assessments at the Helena Goldie Hospital and the Good Samaritan Hospital. We are also thrilled to announce that 20 Oxylinks have been shipped from Kröber in Germany to Australia, where they will be tested before shipment and installation in the Pacific. Dr Divi in the Solomon Islands has also begun the process of hiring a local Project Manager to oversee the pilot program, as well as a Technician to monitor and provide maintenance of FREO2 Systems.



A note from our Country Manager Dr Divi Ogaoga

I would like to thank the support and engagement of our donors, the FREO2 team as well as the clinicians at the National Referral Hospital and our two project sites (the Helena Goldie Hospital and the Good Samaritan Hospital).

With a second wave of COVID-19 sweeping across the Pacific, it has never been more important to increase access to oxygen in these areas. We look forward to building our capacity here and soon beginning the installation of FREO2 systems and clinical training programs in the Solomon Islands.



How the University of Melbourne's 'Believe Campaign' catalysed the treatment of 1,473 children

The University of Melbourne's 'Believe Campaign' is an extraordinary effort that is helping the university to change the lives of future generations. Believe played a significant role in FREO2's Tanzania pilot, which scaled our oxygen innovations across 14 health facilities to treat babies suffering with pneumonia. Believe's investment in FREO2 also catalysed a further \$300,000 in investment from high-profile global NGO's and bi-laterals. Most importantly, the university's support has allowed us to treat 1,473 hypoxic children in Tanzania, who would otherwise have gone without critical oxygen.

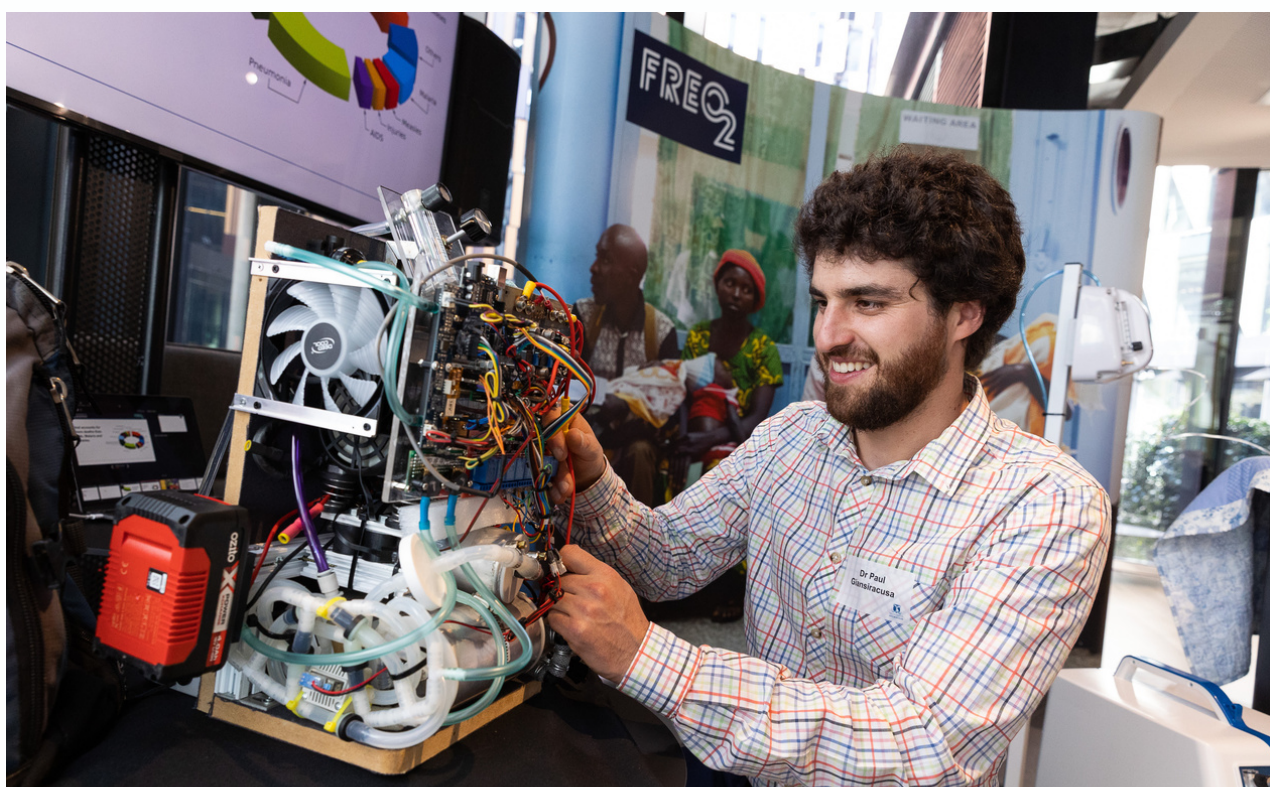
FREO2 was thrilled to be invited to showcase our impact at the 'Believe: A Celebration of Impact' event this March. The conference was a wonderful opportunity to meet and thank our donors as well as the Vice-Chancellor Professor Duncan Maskell and Vice-President of Advancement, Mr. Nick Blinco, who have been vital in supporting our innovation efforts. Thanks to the university's generosity, FREO2 is now providing oxygen solutions to reduce preventable deaths from pneumonia every day.

Pneumonia has long-been labeled a 'silent killer', seeing little global health investment despite being the leading cause of death for children under five, killing over 800,000 children each year. One of the largest barriers to preventing deaths from pneumonia is the impact of electricity access on medical oxygen supply, with commercial oxygen concentrators requiring consistent and stable electricity to function. Sub-saharan Africa experiences the highest pneumonia burden in the world, which is exacerbated by the fact that only half of its population has access to electricity.



When Dr Bryn Sobott, Dr Roger Rassool and Dr David Peake learned of the staggering statistics for preventable deaths from pneumonia, they knew they had to act. With the support of the University of Melbourne, FREO2 Foundation was formed and the three physicists began working on innovative solutions to oxygen access in remote areas where access to electricity is scarce. Since then, FREO2 has developed a fit-for-purpose oxygen concentrator (Oxylink) which is now providing a continuous flow of oxygen to babies and children across Uganda and Tanzania, even during a power outage.

However, the challenge for equitable oxygen access continues, which is why FREO2's innovation team are consistently working to tackle key problems in oxygen delivery through our Oxypump and SOLAR projects. You can find out more about our Oxypump portable system project and SOLAR project [via our website](#),



Dr Paul Giansiracusa from FREO2's innovation team showcases FREO2's Oxypump prototype, which aims to provide a continuous flow of oxygen to babies and children who have to travel long distances to referral hospitals.



Across Melbourne, the importance of translating research into impact was highlighted through the 'Believe' public awareness campaign.

Coming up next quarter...

- Next quarter, FREO2 commences phase two of our Tanzania expansion program with the support of the Oxygen CoLab, UNICEF and FCDO.
- Our Uganda team will be completing the delivery of the 'Transition to Scale' (phase two) program with Grand Challenges Canada. The team has also initiated the planning process for a FREO2 hosted conference in Uganda to celebrate the impact of the program. We look forward to hosting and thanking our donors and partners who have been instrumental to our work in Uganda this September 2022.
- Following baseline assessments this quarter, we are excited to begin supporting clinical training and installation of FREO2 systems in the Solomon Islands over the next quarter!
- Máire Ruane and Roger Rassool from FREO2 Australia will be joining UNICEF and the Oxygen CoLab team to visit our on-the-ground teams in Tanzania and Uganda. We look forward to further developing our programs with the team over this visit and sharing our impact with our supporters next quarter.

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